

Notice of Allowability

Application No.

09/936,727

Examiner

Krista M. Flanagan

Applicant(s)

MIYOSHI ET AL.

Art Unit

2631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment filed on 10 March 2005.
2. ☒ The allowed claim(s) is/are 6-9.
3. ☒ The drawings filed on 10 March 2005 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☒ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date 20050510.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☒ Other See Continuation Sheet.

TESFADET BOGURE
PRIMARY EXAMINER

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

The application has been amended as follows: The drawings are objected to. Figure 7 has non-English characters at the bottom of the page. Appropriate correction is required.

REASONS FOR ALLOWANCE

2. The following is an examiner's statement of reasons for allowance: No prior art shows a multistage interference canceling apparatus or method which cancels interference from a directional array combined signal on a directivity basis by sorting the signals for every directivity as opposed to a user basis.

- a. Prior art fails to disclose a multistage interference signal canceling apparatus, that cancels interference from a directional array combined signal that is received by an array antenna and array combined on a **directivity-by-directivity basis**, said apparatus comprising: an interference canceling unit for generating at every stage, a replica signal of a user; delay means for delaying, at a stage other than a final stage, a received signal by a processing time of the interference canceling unit; canceling means for removing replica signals of all users from the received signal of each directivity, and obtaining a residual signal of the user; adding means for adding the replica signal and the residual signal on a per user basis, and outputting the result to an interference canceling unit of a next stage, wherein the interference canceling unit comprises: directivity selecting means

for selecting the directional array combined signal on a per path basis; despreading means for detecting a correlation value between the selected directional array combined signal and a spreading code; combining means for combining detected correlation values to generate a combined value; temporary determining means for temporarily determining the combined value to generate a temporarily determined value; re-spreading means for re-spreading the temporarily determined value to generate a re-spread signal; **dividing means for sorting re-spread signals for every directivity**, on a per path basis; and adding means for adding the **re-spread signals sorted for every directivity to generate a replica signal**. Where the bolded matter is what is not disclosed in prior art.

b. Prior art also fails to teach such an apparatus in a base station or a method thereof.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

CONCLUSION

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Krista M. Flanagan whose telephone number is (571) 272-2203.

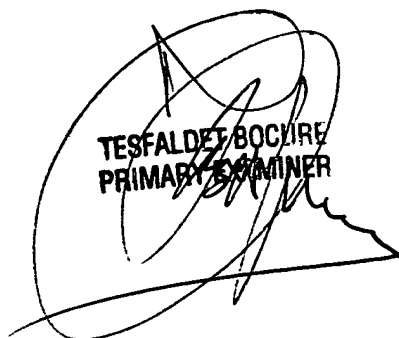
The examiner can normally be reached on Monday - Friday, 8 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad H. Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

K. Flanagan
20050505


TESFALDET BOCKIRE
PRIMARY EXAMINER

Examiner's Amendment

10 May 2005

7/7

09936727.091701

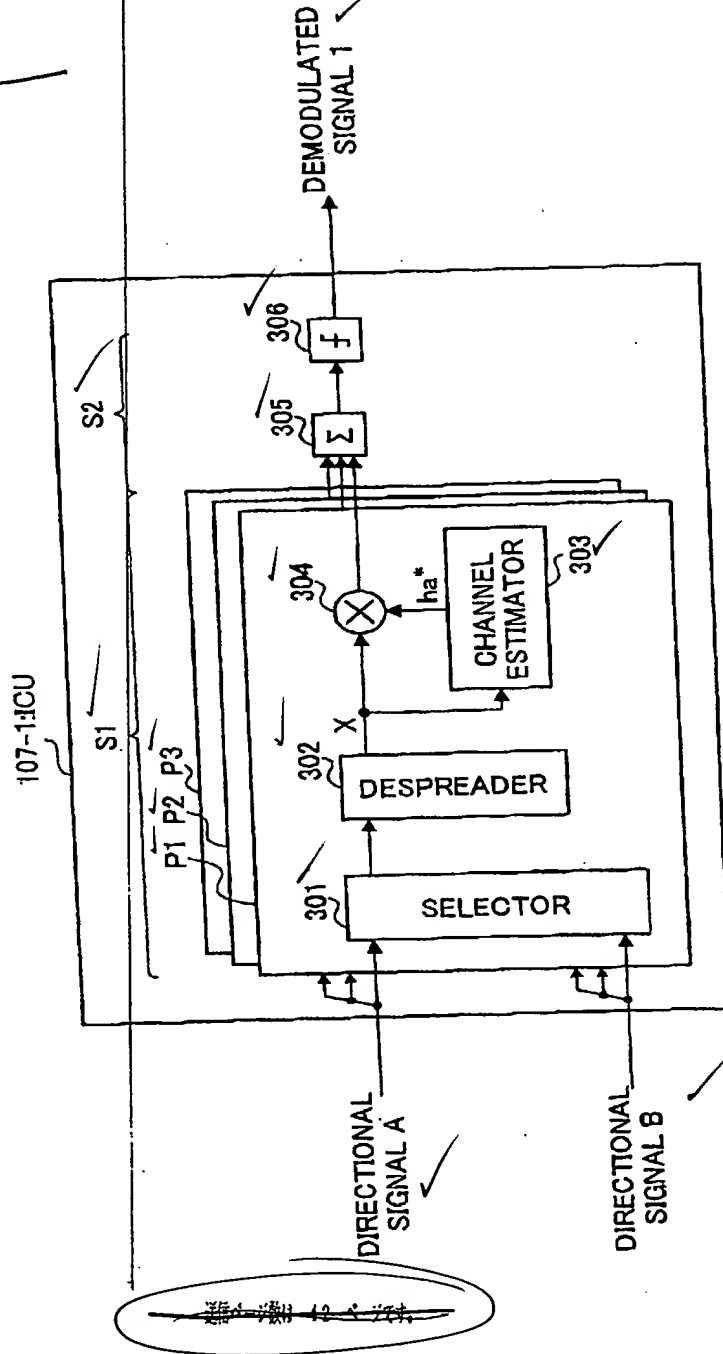


FIG. 7